DETAILED ACTION

Response to Amendment

Applicant's amendments to the drawings, specification and claims, filed 10/15/2009, are accepted and appreciated by the examiner. Applicant has canceled claim 8. In response all previous objections to and rejections of the claims, specification and drawings are hereby withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-6, 9-16, 18-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski (US pat pub 20010004842) in view of Conkle (US pat 4569235).

With respect to claim 1, Krajewski discloses a method comprising:

1) Conducting an upstream measurement of a flow rate (Fig 1 item 6) through the at least one sample inlet (Fig 1 item 3 and paragraph 0025). *The calibration state of the device with respect to its pump is certainly an operational condition. Further, since these devices are known to require constant and correct flow for accuracy (paragraph 0002) this relates directly to accuracy of the particle detector.*

With respect to claim 1, Krajewski fails to disclose:

2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 1:

2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with he sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 2, Krajewski discloses a method comprising:

1) Measuring the upstream flow rate through at least one sampling inlet of a particle detector system (Fig 1 item 6 and paragraph 0025).

2) Determining an operational condition of the pollution monitoring equipment in accordance with the measured flow rate (paragraph 0025 and Fig 2). *See comments with respect to claim 1 above.*

With respect to claim 2, Krajewski fails to disclose:

3) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 2:

3) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing

component need not be in direct contact with he sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art

With respect to claims 3 and 13, Krajewski discloses repeating the step of measuring the upstream flow rate after a predetermined time interval (paragraphs 0011 and 0024-0025) and determining the operational condition by comparing respective flow rate measurements (paragraphs 0011 and 0024-0025).

With respect to claim 4, Krajewski discloses that the predetermined time interval, comprises one or more of: the occurrence of a maintenance action (paragraph 0024); regular calendar periods (paragraph 0024). *In the first case, a first flow test is considered a maintenance action, therefore the second test is performed after said first maintenance action. In the second case the tests are performed subsequently according to the microprocessor's clock which is preprogrammed or scheduled.*

With respect to claim 5, Krajewski discloses that measuring the upstream flow rate, in the first instance, is performed upon one of: repair of the pollution monitoring equipment (paragraphs 0011 and 0024-0025). *The recalibration of the device can be considered to be a repair.*

With respect to claims 6, 11 and 19, Krajewski discloses that the pollution monitoring equipment comprises one or more of: at least one sampling inlet (Fig 1 item 3) of an aspirated particle detector system (paragraph 0017); a particle detector (Fig 1 item 2); a sampling pipe network of an aspirated particle detector system (Fig 1 items 3 and 7); a portion of a sampling

pipe network of an aspirated particle detector system (Fig 1 items 3 and 7); an aspirated particle detector system (Fig 1 item 2 and paragraph 0017).

With respect to claim 8, Krajewski discloses that the step of measuring the flow rate is performed at a point remote from the sampling inlet, at or near ground level (Fig 1 item 6). *Applicant has provided no specific guidance for the interpretation of "remote" or "near" so examiner is forced to rely on the common definitions.*

With respect to claim 9, Krajewski discloses that the operational condition comprises one or more of: a) particle detection system sensitivity (paragraph 0002); b) particle detector sensitivity (paragraph 0002). *As stated, and as known in the art, constant flow is required for accuracy.*

With respect to claim 10, Krajewski discloses an apparatus comprising:

1) A flow sensor arrangement (Fig 1 item 6) adapted to form a sealed fluid communication path (Fig 1 item 4) between a flow sensor and a sampling inlet of the detector system (Fig 1 item 3), wherein the flow sensor determines the flow rate through the sampling inlet so as to allow a determination of an operating condition of the pollution monitoring equipment (paragraphs 0011 and 0025). *See comments with respect to claim 1 above.*

With respect to claim 10, Krajewski fails to disclose:

2) Wherein the sealed fluid communication path further includes an extension means between the flow sensor and the sampling inlet. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 10:

2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with he sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 12, Krajewski discloses an apparatus comprising:

1) A connector adapted to sealingly engage a sampling inlet of a particle detector system (Fig 1 item 5). *This tube would not be of use if it did not seal.*

2) A sensing device comprising a flow sensor for conducting an upstream measurement of flow through the sampling inlet (Fig 1 item 6), wherein the sensing device is operatively connected to a flow data storage (Fig 1 item 1). *See comments with respect to claim 1 above.*

With respect to claim 12, Krajewski fails to disclose:

3) An extension means providing sealed fluid communication between the connector and sensing device such that a flow path is formed between the sensing device and the sampling inlet via the connector. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 12:

3) An extension means providing sealed fluid communication between the connector and sensing device such that a flow path is formed between the sensing device and the sampling inlet via the connector. (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with he sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 14, Krajewski discloses an articulated connection intermediate the connector and extension means for providing relative movement between the connector and extension means (Fig 1 items 4 and 3). *This is a simple pipe connection which can be twisted or slid apart or toward one another.*

With respect to claim 15, Krajewski discloses an articulated connection intermediate the sensing device and extension means for providing relative movement between the sensing device and extension means (Fig 1 items 4 and 3). *This is a simple pipe connection which can be twisted or slid apart or toward one another.*

With respect to claim 16, Krajewski discloses that the articulated connection comprises a flexible collar (Fig 1 items 3 and 4). *This duct or tube is certainly a "collar" since it slips around the other tube. Further it is "flexible" since it is capable of being bent or changed.*

With respect to claim 18, Krajewski discloses a method comprising:

1) Connecting a flow sensing apparatus to a sampling inlet of an air sampling system (Fig 1).

2) Measuring the air flow rate into the sampling inlet (paragraph 0025).

3) Comparing the measured air flow with a previously measured air flow at the time of commissioning the detector system (Fig 2 and paragraphs 0011 and 0024-0025).

With respect to claims 20-21 and 24-25, Krajewski discloses an apparatus (Fig 1) adapted to perform one of: a) determine an operational condition of a particle detection system (paragraphs 0011 and 0024-0025); b) test the operation of pollution monitoring equipment (paragraphs 0011 and 0024-0025); or c) field test a particle detector system (paragraphs 0011 and 0024-0025). *See above comments with respect to claim 1.*

With respect to claim 18, Krajewski fails to disclose:

1) A sampling inlet including an extension means *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 18:

1) A sampling inlet including an extension means(Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with he sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

2.

Claims 7 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski and Conkle as applied to claims 1 and 10 above, and further in view of Stark (US pat 6439062).

With respect to claims 7 and 17, Krajewski and Conkle fail to disclose that measuring the flow rate is performed using an ultrasonic flow sensor.

Stark teaches, with respect to claims 7 and 17, that measuring of flow rate is performed using an ultrasonic flow sensor (column 1 lines 16-25 and column 8 lines 42-48).

It would have been obvious to one of ordinary skill in the art to modify the apparatus and method of Krajewski and Conkle by utilizing an ultrasonic flow monitoring device as taught by Stark. Krajewski does not specify what sort of flow meter be used. One of ordinary skill in the art would logically have looked to the prior art for information concerning known devices which can perform this function, such as that of Stark. Ultrasonic flow meters are well known in the art of flow metering and thus would have been an obvious choice.

Response to Arguments

Applicant's arguments with respect to claims 1-7, 9-21 and 23-25 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claim 12, the examiner maintains that this claim is anticipated by prior art Krajewski. The inlet tube (item 5) inherently provides a sealed fluid communication between the inlet and a connection to sampler 6 and, because it is a tube instead of just a hole, inherently provides “extension means”. However, in order to more accurately depict applicant's invention as described in the drawings, the above new grounds for rejection are relied upon.

Applicant further points out in the response that prior art Krajewski is differentiated from the present invention in that “testing of a particular sampling point from among a number of sampling points" and an extensions means comprising a tube “6m long" is not disclosed. The examiner points out that none of these limitations are present in the language of the claims nor

can they be read to be inherent to the language of said claims. Applicant is advised to amend the claims to include such limitations if such an interpretation is desired.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN TEIXEIRA MOFFAT whose telephone number is (571)272-2255. The examiner can normally be reached on Mon-Fri, from 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/jtm/
JTM
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/Bryan Bui/
Primary Examiner, Art Unit 2863